

**FOSSOMBRONIA MARSHII (MARCHANTIOPHYTA), A NEW  
LIVERWORT SPECIES FROM ARKANSAS**

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**ABSTRACT**

Field studies initiated by the third author in Arkansas, U.S.A. resulted in the discovery of an undescribed species of the liverwort genus *Fossombronia*. This new species is somewhat similar to *F. foveolata* Lindb., but is distinct in a suite of vegetative and reproductive characters. Among them is a much smaller plant size, an erect leaf stance, the capacity to produce apical tubers, dioecious sexuality, a different caulocalyx morphology, and fewer distal spore surface areolae. *Phytologia* 92(2): 230-232 (August 2, 2010).

**KEY WORDS:** Arkansas, *Fossombronia*, Marchantiophyta, new liverwort species.

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During our field studies of the Fossombroniales Schljakov of the south-central United States, a new species of *Fossombronia* Raddi was discovered in the Western Gulf Coastal Plain of Arkansas. The following Latin diagnosis is given to make the name immediately available for use. A detailed treatment with illustrations of this taxon is in preparation.

**FOSSOMBRONIA MARSHII** J. R. Bray & Stotler, **sp. nov.**

Plantae dioicae, plantis masculinis parvioribus quam femineis, foliis erectis atque crispis, caulocalycibus stipitibus brevibus, apicibus

surculorum facientibus tubera; sporae areolatae, 3–5 areolis trans diametrum.

HOLOTYPE: U.S.A. ARKANSAS. Columbia County, Ebenezer Church Cemetery, 33° 35' N, 93° 17' W, on sandy soil in an open mowed grassy area, 10 March 1997, *Stotler & Crandall-Stotler 3940* (ABSH); PARATYPES: ARKANSAS. Columbia County, ca 1.8 mi W of Atlanta on Hwy 98, S side of Highway, 33° 12' N, 93° 05' W, on fine sandy loam along power line cut, 24 Nov. 1996, *Bray 297* (ABSH); 22 Nov. 1998, *Bray 327* (ABSH)

This species is named in honor of Daniel L. Marsh, Professor Emeritus of Biology, Henderson State University, Arkadelphia, AR whose field excursions in Arkansas throughout his teaching career were inspirational to his students.

*Fossombronia marshii* occurs on loose sandy to sandy loam soils that typically drain water fairly quickly and have little moisture holding capacity. While desiccation obviously could be a limiting factor of this habitat, apical tubers that can serve as perennating structures are produced in this species. In contrast to *F. foveolata*, the plants are relatively small with an erect leaf stance and with leaves that are very rucked and crisped. The caulocalyx is short-stalked rather than long-stalked as in *F. foveolata* and the mouth is erect to incurved. The distal spore surface is areolate, with only 3 to 5 large areolae across the spore diameter, in contrast to the 5 to 7 areolae typically found in *F. foveolata*. *Fossombronia marshii* is the first dioecious species of this genus to be documented for North America. The plants are dimorphic, with male plants being much smaller than female plants. The antheridia are large, yellow to orange and crowded along the dorsal stem surface. Mature male plants are, therefore, strikingly conspicuous in the field, even without the aid of magnification. It was the observation of these very distinctive male plants that led to finding this species. Subsequent monitoring of the phenology of populations in several sites resulted in the discovery of female plants with mature sporophytes.

At present, *F. marshii* appears to be restricted to the Western Gulf Coastal Plains. Future field studies in Louisiana, Mississippi and

Texas and a review of herbarium specimens, particularly those labeled *F. foveolata*, likely will result in expanding the known distribution.

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